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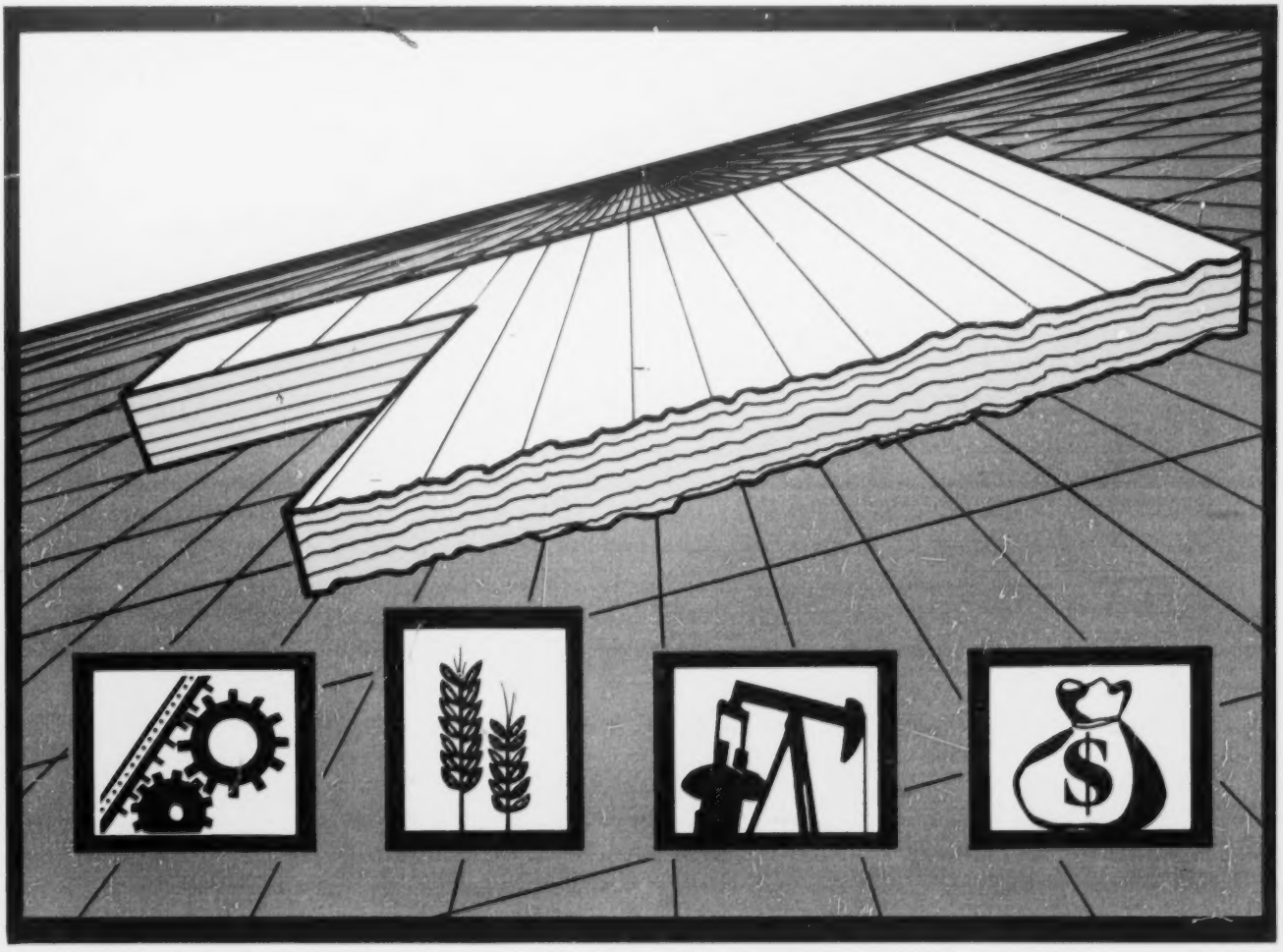

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SUMMARY OF INDICATORS

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
Personal Income (Monthly Average)					
Unadjusted ($000,000)	3,654	3,422	3,774	6.8	0.9
Adjusted for CPI ($000,000)	3,090	3,012	3,132	2.6	0.7
Crude Oil Production (000 bbl)	118,526	123,328	9,751	-3.9	6.6
Natural Gas Production (000 mcf)[a]	2,032,322	2,028,043	146,391	0.2	-15.4
Industrial Power Sales (000,000 Kwh)[b]	8,543	8,216	698	4.0	-2.2
Total Bank Deposits (Monthly Average) ($000,000)[c]					
Demand	7,556	7,518	7,614	0.5	1.7
Savings	24,354	25,324	23,811	-3.8	-1.0
Savings and Loan Associations ($000,000)					
Assets	10,527	9,847	11,052	6.9	4.2
Mortgage Loans Closed	640	948	54	-32.5	30.3
General Business Index	94.9	94.1	96.3	0.9	1.0

Note: Includes revisions.

[a]Natural gas includes casinghead gas.

[b]Sales of larger privately owned utility companies.

[c]Total deposits of all depository institutions.

SELECTED ECONOMIC INDICATORS

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	258,482	304,678	15,795	-15.2	-23.4
Number of Units	3,476	4,659	216	-25.4	-17.9
Residential—Multi Family					
Dollar Value ($000)	5,651	21,883	0	-74.2	0.0
Number of Units	277	924	0	-70.0	0.0
Nonresidential					
Commercial ($000)	151,077	172,375	5,942	-12.4	-14.6
Industrial ($000)	33,552	19,606	2,049	71.1	18.0
Institutional ($000)	50,636	48,212	5,450	5.0	-7.9
Nonbuilding					
Streets and Highways ($000)	280,383	266,459	20,072	5.2	14.2
All Other Nonbuilding ($000)	6,133	8,207	138	-25.3	-63.5
Total Construction ($000)	785,914	841,419	49,447	-6.6	-7.0
EMPLOYMENT TRENDS					
Total Labor Force (000)[a]	NA	NA	1,528.5	NA	0.1
Total Employment (000)	NA	NA	1,443.0	NA	0.0
Manufacturing (000)	162.9	156.8	165.6	3.9	0.2
Mining (000)	44.9	46.0	44.1	-2.4	0.2
Government (000)	247.5	245.3	251.0	0.1	0.9
Contract Construction (000)	34.5	34.5	32.3	0.0	-3.6
Services (000)	248.0	232.6	250.3	6.6	-0.4
Retail Trade (000)	215.0	211.5	222.6	1.7	1.6
Unemployment Rate (%)	NA	NA	5.6	—	—
Average Weekly Hours					
Manufacturing (Per Worker)	41.1	41.2	41.9	-0.2	0.5
Average Weekly Earnings					
Manufacturing ($ Per Worker)	427.13	417.21	441.63	2.4	-1.0
Contract Construction ($ Per Worker)	430.20	428.99	433.55	0.3	1.2
Retail Trade ($ Per Worker)[b]	191.47	191.64	197.09	0.0	4.4

Note: Includes revisions in some previous months. O.E.S.C. has not yet released revised data for Labor Force. Employment and unemployment rate prior to November, 1988.

[a]Civilian Labor Force.

[b]Excluding eating and drinking places.

NA = Not Available.

RETAIL TRADE IN METRO AREAS AND STATE
(5000)

Retail Trade	12 Mos. '88 Adjusted	12 Mos. '87 Adjusted	Dec. '88 Adjusted	Dec. '88 Unadjusted	Percentage Change 12 Mos. '88/'87 Adjusted	Percentage Change Dec./Nov. '88 Adjusted	Percentage Change Dec./Nov. '88 Unadjusted
OKLAHOMA CITY MSA							
Food	2,353,466	2,269,751	210,672	216,556	3.7	3.6	12.4
Apparel	173,212	182,792	14,690	26,304	-5.2	3.9	78.0
General Merchandise	771,270	716,235	69,449	124,985	7.7	3.7	68.2
Furniture	262,630	252,607	34,963	45,566	4.0	75.0	115.7
Lumber	182,327	169,056	17,371	13,329	7.9	3.9	-13.5
Auto Dealers	1,874,854	1,537,573	152,904	145,177	21.9	37.2	22.6
Service Stations	204,459	205,644	18,726	18,367	-0.6	10.4	17.9
All Other	777,127	743,863	70,758	109,676	4.5	-1.5	58.0
Total	6,599,345	6,077,521	589,533	699,960	8.6	13.1	34.2
TULSA MSA							
Food	1,368,949	1,326,089	118,872	127,130	3.2	1.4	16.0
Apparel	157,473	166,557	13,436	24,302	-5.5	7.9	80.1
General Merchandise	682,052	595,373	66,236	113,185	14.6	4.5	71.8
Furniture	155,243	140,197	13,851	19,969	10.7	23.4	74.0
Lumber	138,649	139,178	12,941	11,703	-0.4	4.0	-5.1
Auto Dealers	1,090,872	894,628	88,967	84,471	21.9	37.2	22.6
Service Stations	167,979	168,939	15,385	15,090	-0.6	10.4	17.9
All Other	147,912	160,110	15,548	20,091	-7.6	44.1	76.9
Total	3,909,129	3,591,071	345,236	415,941	8.9	12.7	36.0
ENID MSA							
Food	113,139	112,475	10,039	10,625	0.6	4.6	14.5
Apparel	16,347	17,960	1,421	2,116	-9.0	-2.3	50.7
General Merchandise	52,002	48,985	4,758	8,805	6.2	4.4	79.7
Furniture	13,716	11,997	2,184	2,722	14.3	97.3	157.0
Lumber	16,320	15,784	1,891	1,442	3.4	59.6	13.0
Auto Dealers	107,305	88,002	8,751	8,309	21.9	37.2	22.6
Service Stations	15,066	15,159	1,380	1,353	-0.6	10.5	17.9
All Other	35,279	36,189	2,619	4,777	-2.5	-8.5	71.0
Total	369,174	346,551	33,043	40,149	6.5	16.4	40.2
LAWTON MSA							
Food	191,322	191,668	16,993	16,848	-0.2	10.5	16.1
Apparel	21,719	21,684	1,919	3,081	0.2	7.0	80.2
General Merchandise	151,311	141,153	12,954	22,554	7.2	-0.6	59.9
Furniture	28,970	27,037	2,565	2,992	7.1	-6.4	-1.0
Lumber	16,911	20,872	1,422	1,132	-19.0	18.8	-7.9
Auto Dealers	142,996	117,274	11,662	11,073	21.9	37.2	22.6
Service Stations	10,287	10,349	942	924	-0.6	10.4	17.9
All Other	38,857	45,192	3,428	4,669	-14.0	15.0	61.5
Total	602,373	575,229	51,885	63,203	4.7	11.6	33.9
MUSKOGEE AREA							
Food	133,806	133,694	12,417	12,172	0.1	28.7	40.6
Apparel	22,124	19,800	2,211	3,602	11.7	7.3	85.3
General Merchandise	47,965	42,952	4,261	7,806	11.7	0.8	83.3
Furniture	12,707	13,982	1,690	2,108	-9.1	45.4	88.9
Lumber	4,441	5,023	370	300	-11.6	-11.7	-18.7
Auto Dealers	90,188	73,977	7,355	6,983	21.9	37.2	22.6
Service Stations	13,166	13,265	1,204	1,182	-0.7	10.4	17.8
All Other	33,624	36,372	2,706	3,910	-7.6	-28.5	26.6
Total	358,021	339,065	32,214	38,063	5.6	16.1	45.7
STATE[a]							
Durable Goods	6,541,480	5,626,608	537,868	546,635	16.3	24.4	21.5
Auto Dealers	4,684,302	3,841,836	382,030	362,725	21.9	37.2	22.6
Accessory Dealers	330,327	327,485	26,311	26,648	0.9	-8.0	-1.0
Total Automotive	5,014,629	4,169,321	408,341	389,373	20.3	33.0	20.6
Furniture	350,353	321,654	35,570	40,744	8.9	26.5	41.6
Household Appliances	235,098	229,130	20,734	26,268	2.6	3.0	32.0
Total Furniture and Appliances	585,451	550,784	56,304	67,012	6.3	16.6	37.7
Lumber and Building Materials	566,784	558,761	52,865	43,806	1.4	4.4	-9.9
Hardware Stores	67,349	63,148	6,189	6,854	6.7	4.6	23.6
Total Lumber, Building Materials & Hardware	634,133	621,909	59,054	50,660	2.0	4.4	-6.5
Nondurable Goods	10,832,051	10,883,405	958,705	1,171,779	-0.5	3.3	27.6
Apparel	600,214	620,388	53,059	90,392	-3.3	8.4	79.6
Drug Stores	505,794	537,742	44,480	57,742	-5.9	-7.3	20.6
Eating and Drinking Places	1,911,967	1,883,846	175,488	167,494	1.5	7.5	10.5
Food Group	4,420,438	4,520,429	386,841	404,187	-2.2	1.5	11.0
Service Stations	671,375	675,268	61,495	60,314	-0.6	10.4	17.9
General Merchandise Group	1,987,739	1,895,349	175,557	312,021	4.9	2.9	61.5
Total Retail Trade	17,373,531	16,510,013	1,496,573	1,718,414	5.2	10.0	25.6

[a]Total includes data for categories not shown in the table.

RETAIL TRADE IN SELECTED CITIES
($000)

Retail Trade	12 Mos. '88 Adjusted	12 Mos. '87 Adjusted	Dec. '88 Adjusted	Dec. '88 Unadjusted	Percentage Change 12 Mos. '88/'87 Adjusted	Percentage Change Dec./Nov. '88 Adjusted	Percentage Change Dec./Nov. '88 Unadjusted
Ada	169,111	159,170	15,286	18,417	6.2	9.1	37.2
Altus	149,925	141,266	12,526	14,804	6.1	7.2	29.7
Alva	46,400	43,105	3,741	4,351	7.6	3.6	22.0
Anadarko	59,121	54,481	5,237	6,151	8.5	6.1	31.3
Ardmore	232,980	216,633	20,014	24,579	7.5	5.4	35.4
Bartlesville	233,629	220,092	20,132	25,071	6.2	7.9	34.6
Blackwell	40,874	34,833	3,369	3,870	17.3	16.7	33.4
Broken Arrow	235,377	208,442	21,148	22,993	12.9	18.6	27.6
Chickasha	112,853	103,675	9,275	10,660	8.9	10.0	25.4
Clinton	79,431	69,727	6,700	7,392	13.9	18.8	29.0
Cushing	65,930	62,190	5,469	6,414	6.0	-2.7	15.4
Del City	131,979	129,342	11,796	11,914	2.0	11.1	20.0
Duncan	181,279	155,223	14,776	17,152	16.8	17.7	32.4
Durant	127,176	117,227	10,448	12,345	8.5	1.1	28.7
Edmond	295,812	253,528	24,869	28,543	16.7	7.3	25.1
Elk City	93,319	83,224	8,185	9,392	12.1	10.7	30.0
El Reno	96,087	85,837	8,633	9,554	11.9	19.4	26.2
Guthrie	62,799	58,318	5,251	5,566	7.7	10.5	16.2
Guymon	54,273	50,085	4,759	5,838	8.4	9.7	38.7
Henryetta	57,748	53,796	4,760	5,619	7.3	2.7	25.2
Hobart	28,256	26,091	2,482	2,758	8.3	13.9	26.2
Holdenville	32,749	30,569	2,757	3,149	7.1	15.5	29.7
Hugo	34,015	31,160	2,732	3,155	9.2	2.1	25.6
Idabel	44,659	43,082	3,995	4,513	3.7	25.5	37.5
Lawton	573,652	547,563	49,647	60,374	4.8	8.7	34.2
McAlester	120,681	110,914	9,885	11,526	8.8	8.1	24.9
Miami	136,077	128,821	10,952	14,124	5.6	-1.6	32.4
Midwest City	426,208	392,969	40,631	48,355	8.5	26.1	42.5
Moore	159,290	157,508	14,215	16,005	1.1	16.2	30.0
Muskogee	331,498	324,392	23,361	27,209	2.2	20.6	43.2
Norman	752,368	666,487	64,051	72,632	12.9	15.8	29.8
Oklahoma City	3,333,170	3,125,777	293,653	362,689	6.6	16.4	39.4
Okmulgee	62,904	59,780	5,454	5,973	5.2	16.2	26.1
Pauls Valley	50,829	44,931	4,164	4,878	13.1	2.0	23.9
Pawhuska	20,282	19,003	1,705	1,985	6.7	-2.7	16.6
Ponca City	200,436	179,637	17,811	21,821	11.6	9.8	37.3
Poteau	55,868	49,657	4,626	5,310	12.5	10.9	22.9
Sand Springs	102,607	96,940	9,510	11,074	5.8	19.0	37.6
Sapulpa	153,256	141,261	12,806	14,592	8.5	9.7	24.6
Seminole	69,903	65,138	6,269	7,300	7.3	24.7	42.5
Shawnee	305,999	276,392	27,053	31,903	10.7	8.5	27.0
Stillwater	295,084	272,730	26,070	29,688	8.2	6.6	23.7
Tahlequah	90,312	87,709	8,050	8,749	3.0	13.7	26.6
Tulsa	2,971,538	2,727,394	273,728	329,939	9.0	18.2	40.8
Watonga	21,160	20,130	1,744	1,949	5.1	-2.7	11.2
Weatherford	66,577	60,013	5,815	6,654	10.9	12.3	30.8
Wewoka	13,500	12,878	1,110	1,161	4.8	11.3	17.2
Woodward	137,419	124,651	11,984	13,676	10.2	16.9	30.5
Total Selected Cities	13,116,400	12,123,771	1,152,634	1,373,766	8.2	14.5	35.3

Sources for all tables: Local utilities companies; 10th Federal Reserve District Member Banks; Federal Home Loan Bank of Topeka; Oklahoma Employment Security Commission; United States Department of Commerce, Construction Statistics Division; Oklahoma Department of Transportation, *Progressive Report of the Transportation Director*; Center for Economic and Management Research, College of Business Administration, The University of Oklahoma. The data for all tables were compiled by Marjorie E. Earley, Statistician for CEMR and Brian Hickey, Research Assistant.

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ENID AND LAWTON MSAs

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
ENID MSA					
Employment (Number)					
Labor Force[a]	NA	NA	28,325	NA	0.4
Total Employment	NA	NA	27,050	NA	0.4
Unemployment Rate (%)	NA	NA	4.5	—	—
Industrial Power Sales (000 Kwh)	460,854	458,055	39,600	0.6	8.1
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	1,205	2,318	0	-48.0	—
Number of Units	11	24	0	-54.2	—
Residential—Multi Family					
Dollar Value ($000)	0	0	0	0.0	0.0
Number of Units	0	0	0	0.0	0.0
Nonresidential					
Commercial ($000)	1,052	493	20	113.5	-90.7
Industrial ($000)	0	1,194	0	—	0.0
Institutional ($000)	300	2,052	0	-85.4	0.0
Nonbuilding					
Streets and Highways ($000)	2,692	772	0	248.6	0.0
All Other Nonbuilding ($000)	152	336	0	-54.7	—
Total Construction ($000)	5,401	7,165	20	-24.6	-96.9
LAWTON MSA					
Employment (Number)					
Labor Force[a]	NA	NA	48,650	NA	1.2
Total Employment	NA	NA	46,275	NA	1.8
Unemployment Rate (%)	NA	NA	4.9	—	—
Industrial Power Sales (000 Kwh)	200,704	196,066	15,716	2.4	-9.5
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	12,026	18,305	466	-34.3	-19.5
Number of Units	152	286	5	-46.9	-16.7
Residential—Multi Family					
Dollar Value ($000)	180	740	0	-75.7	0.0
Number of Units	6	40	0	-85.0	0.0
Nonresidential					
Commercial ($000)	5,143	3,360	215	29.9	-71.9
Industrial ($000)	830	320	0	159.4	0.0
Institutional ($000)	4,390	1,435	3,000	205.9	—
Nonbuilding					
Streets and Highways ($000)	7,962	1,722	0	362.5	0.0
All Other Nonbuilding ($000)	0	8	0	—	0.0
Total Construction ($000)	30,531	26,489	3,681	15.3	173.7

Note: Includes revisions. [a]Civilian Labor Force. NA = Not Available.

MUSKOGEE MA

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
Employment (Number)					
Labor Force[a]	NA	NA	32,000	NA	0.5
Total Employment	NA	NA	29,475	NA	0.7
Unemployment Rate (%)	NA	NA	7.9	—	—
Industrial Power Sales (000 Kwh)	172,966	190,701	12,750	-9.3	-15.5
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	216	1,414	0	-84.7	0.0
Number of Units	2	15	0	-86.7	0.0
Residential—Multi Family					
Dollar Value ($000)	0	75	0	—	0.0
Number of Units	0	2	0	—	0.0
Nonresidential					
Commercial ($000)	400	6,660	0	-94.0	0.0
Industrial ($000)	0	20	0	—	0.0
Institutional ($000)	0	0	0	0.0	0.0
Nonbuilding					
Streets and Highways ($000)	4,181	967	334	332.6	-51.4
All Other Nonbuilding ($000)	5	0	0	—	0.0
Total Construction ($000)	4,802	9,136	334	-47.4	-51.4

Note: Includes revisions. [a]Civilian Labor Force. NA = Not Available.

TULSA MSA

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
Employment (Number)					
Labor Force[a]	NA	NA	340,700	NA	0.6
Total Employment	NA	NA	321,200	NA	0.8
Manufacturing	49,500	48,000	50,000	3.1	-0.6
Mining	14,300	14,800	14,400	-4.0	0.7
Government	36,800	35,700	36,300	3.1	0.0
Wholesale and Retail Trade	70,600	70,900	71,400	-4.4	1.3
Unemployment Rate (%)	NA	NA	5.7	—	—
Average Weekly Earnings					
Manufacturing ($ Per Worker)	448.06	440.47	463.95	1.7	1.4
Industrial Power Sales (000 Kwh)	2,256,616	2,099,207	184,869	7.5	-3.7
Mortgage Loans Closed ($000,000)[b]	234	263	21	-11.0	69.0
Bank Deposits ($000,000)[c]					
Demand Deposits	888	853	953	4.1	1.0
Time and Savings Deposits	2,164	2,290	2,121	-5.5	-1.5
Air Transportation					
Passengers Enplaning (Number)	1,375,113	1,396,864	114,930	-1.6	-1.0
Passengers Deplaning (Number)	1,395,416	1,410,525	122,221	-1.1	5.3
Freight (Tons)	22,365	16,391	1,981	36.4	3.5
Water Transportation					
Tulsa Port of Catoosa					
Tons In	493,805	537,318	40,397	-8.1	-9.1
Tons Out	1,205,227	1,274,220	165,386	-5.4	35.7
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	106,129	120,769	6,595	-12.1	-17.2
Number of Units	1,417	1,730	93	-18.1	-17.0
Residential—Multi Family					
Dollar Value ($000)	1,378	11,169	0	-87.7	0.0
Number of Units	58	518	0	-88.8	0.0
Nonresidential					
Commercial ($000)	59,163	26,026	1,273	127.3	32.6
Industrial ($000)	19,156	11,761	2,017	62.9	21.0
Institutional ($000)	20,343	16,678	1,150	22.0	-72.4
Nonbuilding					
Streets and Highways ($000)	57,009	34,680	13,898	64.4	74.2
All Other Nonbuilding ($000)	3,561	3,996	106	-10.9	-54.3
Total Construction	266,739	225,078	25,039	18.5	9.0
General Business Index	88.9	87.3	91.7	1.8	1.4

Note: Includes revisions.

[a]Civilian Labor Force.

[b]By Savings and Loan Associations.

[c]Deposits of large commercial banks (accounted for 50 percent of all commercial bank deposits as of December 31, 1987).

NA = Not Available.

OKLAHOMA CITY MSA

Category	12 Mos. '88	12 Mos. '87	Dec. '88	Percentage Change 12 Mos. '88/'87	Percentage Change Dec./Nov. '88
Employment (Number)					
Labor Force[a]	NA	NA	496,800	NA	0.8
Total Employment	NA	NA	473,100	NA	0.6
Manufacturing	48,700	47,500	49,100	2.5	-0.4
Mining	11,700	11,600	11,000	0.9	-0.9
Government	95,900	96,200	98,500	-0.3	0.8
Wholesale and Retail Trade	100,900	99,900	103,100	1.0	1.5
Unemployment Rate (%)	NA	NA	4.8	—	—
Average Weekly Earnings					
Manufacturing ($ Per Worker)	481.60	452.79	503.86	6.4	-3.0
Industrial Power Sales (000 Kwh)	1,216,176	1,231,399	93,642	-1.2	-8.0
Mortgage Loans Closed ($000,000)[b]	121	211	12	-42.7	56.0
Bank Deposits ($000,000)[c]					
Demand Deposits	829	909	875	-8.8	2.1
Time and Savings Deposits	1,151	1,503	1,186	-23.4	-1.3
Air Transportation					
Passengers Enplaning (Number)	1,509,824	1,509,872	128,875	0.0	-0.3
Passengers Deplaning (Number)	1,520,302	1,515,834	126,246	0.3	-2.7
Freight Enplaned (Tons)	7,926	6,498	847	22.0	52.3
Freight Deplaned (Tons)	10,765	10,366	889	3.8	15.2
PERMIT-AUTHORIZED CONSTRUCTION					
Residential—Single Family					
Dollar Value ($000)	115,093	127,801	8,221	-9.9	-14.7
Number of Units	1,585	2,022	111	-21.6	-0.9
Residential—Multi Family					
Dollar Value ($000)	1,374	4,959	0	-72.3	0.0
Number of Units	75	143	0	-47.6	0.0
Nonresidential					
Commercial ($000)	71,021	113,935	3,990	-37.7	29.5
Industrial ($000)	5,539	2,988	0	85.4	—
Institutional ($000)	16,104	18,170	230	-11.4	—
Nonbuilding					
Streets and Highways ($000)	57,313	68,219	630	-16.0	-62.1
All Other Nonbuilding ($000)	2,085	3,445	28	-39.5	-77.1
Total Construction ($000)	268,530	339,518	13,099	-20.9	-10.1
General Business Index	93.0	89.6	95.2	3.8	-0.9

Note: Includes revisions.

[a]Civilian Labor Force.

[b]By Savings and Loan Associations.

[c]Deposits of large commercial banks (accounted for 36 percent of all commercial bank deposits as of December 31, 1987).

NA = Not Available.

Business Highlights

NEIL J. DIKEMAN, JR.

GENERALLY SPEAKING, the economy of Oklahoma in 1988 behaved as expected at this time a year ago. This is to say that those sectors of the economy which were expected to increase did so and those projected to remain flat or decline also generally followed expectations. In total, economic conditions in the-State exhibited considerably more strength than had been the case in the previous three years which hopefully will become the basis for a vastly improved economy in 1989. The 1987 forecasts and actual changes which occurred during 1988 will be discussed in the paragraphs which follow.

Personal Income

Personal income in Oklahoma during 1988 was forecast to increase by 2 percent over 1987 to a total of $43 billion in terms of current dollars. In actuality, personal income in Oklahoma rose by 6.8 percent to nearly $44 billion in current dollars (or $37.1 billion in 1982 dollar equivalents). As will be shown later, much of this increase in personal income appeared in sales of durable goods at retail which suggests that consumers were reasonably satisfied with the state of the economy in 1988 as was predicted last year.

Retail Sales

Retail Sales during 1987 showed every indication of beginning to break out of the doldrums which had characterized them since 1983 and was the basis for the forecast of a 4.5 percent increase during 1988. This forecast not only followed the upward pattern of retailing activity during the year but was more conservative than the 5.2 percent gain which was actually registered in 1988. This increase raised the level of sales to $17.4 billion which was the highest on record in terms of current dollars but also represented an increase in real sales of 1.6 percent in 1982 dollar equivalents.

The increase in sales during 1988 was due entirely to a 16.3 percent increase in sales of durable goods which, in turn, was due to gains of 20.3 percent in sales of automobiles and accessories, 6.7 percent in hardware sales and 8.9 percent in sales of furniture. This gain in furniture sales was due in part to an increase of 83 percent in computer and software sales during December. The increase in durable goods sales was tempered by a decline of 0.5 percent in sales of nondurable goods, the third such decrease in as many years. The encouraging aspect of this decline in sales of soft goods was that it represented the smallest relative decrease during the three year period thus suggesting that its downturn had bottomed out and annual gains might be expected in the future. It was also encouraging to note that sales of all nondurable lines except drug stores experienced gains which were greater than seasonally expected in December which indicates that Christmas sales exceeded the rise which normally occurs at this time of the year and resulted in the best Christmas for retailers since 1984.

Banking and Finance

This economic indicator represented still another area of business activity for which the forecast for 1988 was reasonably accurate if not somewhat conservative. Since the outflow of savings from all regulated depositories in Oklahoma had declined steadily during both 1986 and 1987 and the reasons for these decreases remained in force, it seemed only logical to expect that a further decline in deposits of from 1 to 2 percent would occur in 1988 and occur it did although the drop amounted to 2.2 percent and thereby reduced the deposit level in such institutions to its lowest point since 1983. As was the case in both 1986 and 1987, the decline in savings deposits was the culprit in 1988 as they declined by 3.8 percent

while demand deposit balances rose by 0.5 percent. Some of this decline in savings accounts can be attributed to the sharp increase in sales of durable goods at the retail level. However, another, and possibly larger, portion of the decline was due to the investment of savings in non-banking instruments.

Construction

The earlier forecast of an increase in construction activity during 1988 of 5 percent was predicated on the following assumptions: first, that the trend in outmigration which had adversely affected the demand for housing since 1984 would be reversed and that the resultant inflow of households in the state would trigger an increase in the construction of single family dwellings. Second, that institutional building activity would decline by about 10 percent; third, that commercial building activity would continue the downward trend begun in 1984 and therefore would be off the 1987 level by 15 percent; and fourth, that street and highway, industrial building and all other nonbuilding construction would each increase by from 10 to 15 percent during the year. Unfortunately, the reversal of the trend in out-migration — while it did occur — was much less pronounced than had been anticipated thus resulting in a further decline in the dollar volume of single family housing construction of 15.2 percent. Also, all other nonbuilding construction which includes such projects as installation of sewers, water mains, etc., declined by more than 25 percent during the year and street and highway construction rose by only 5.2 percent rather than the projected 10 to 15 percent increase. As a result of the failure to accurately assess the patterns of change in the various components of the construction industry, the total dollar volume of construction activity during 1988 was 6.6 percent below that of 1987 rather than the projected 5 percent gain and thus extended the downward trend in construction in Oklahoma to its fifth consecutive year. The two types of construction activity that experienced increases during the year which offset somewhat the decreases described above were institutional building construction with an increase of 5 percent and industrial building which rose 71 percent.

Energy

Preliminary reports indicate that crude oil and natural gas production behaved as expected during 1988 although the changes in these important elements of the State's economy varied somewhat from those which were forecast. Crude oil production during calendar year 1988 declined 3.9 percent to 118.5 million barrels as opposed to the 3 percent decline which was forecast earlier. This represents the fourth successive annual decrease in the volume of crude oil produced in Oklahoma and was caused essentially by the failure of prices to stablilize at levels above $18 per barrel.

Natural and casinghead gas production was 0.2 percent above the 1987 volume which compared less favorably with the forecasted 2 percent increase. This increase marked the second in as many years and raised the level of output to more than 2.0 trillion cubic feet which is the highest volume of output since calendar year 1981 and the second highest on record.

Manufacturing

Manufacturing activity, as measured by average monthly manufacturing employment, rose by 3.9 percent during 1988 to reverse the downward trend of the two previous years. This increase was in contrast with the forecast which foresaw no appreciable gains during the year. Further evidence that manufacturing activity in the State rose during 1988 was the fact that industrial power sales were 4 percent higher than in 1987.

Employment

The forecast of average monthly employment during 1988 was for a modest increase in the total number employed. However, this expected gain assumed slight increases in the trades, services and construction coupled with little or no increases in manufacturing, mining and government. However, revised data recently released by the Oklahoma Employment Security Commission indicated that while increases occurred in manufacturing, government, and trades and services, mining employment declined while construction employment remained unchanged. Despite these changes—which were generally upward and would have tended to support the forecast—the average monthly employment in the "All Other" category declined by 16.5 percent which will probably cause total average monthly employment to decline during the year.[1]

One element of optimism which can be found in the current labor data is the fact that average monthly employment of wage and salaried employees in 1988 was 2.2 percent higher than in 1987. Thus, it appears that the huge decline in the "All Other" labor category occurred in smaller operations and in personal service activities.

Oklahoma General Business Index

The General Business Index for the State rose for the second successive year in 1988 to 94.9 percent—an increase of 0.9 percent. This brought the level for the year to its highest since 1984. Despite the relative importance of this rise, it failed to equal the 4 percent gain which was expected of it at the end of 1987 due primarily to the continued decreases in construction and mining activity as well as in total employment.

The Outlook

Most changes in a State's economic condition depend heavily on changes which occur in the nation's economy, therefore, any forecasts of future economic changes must take into consideration the changes which might occur at the national level. Forecasts made early in the first year of a new administration are particularly susceptible to error because the administration's policies and priorities remain relatively undefined and the methods which a new administration will

employ in solving inherited as well as new problems will probably differ significantly from those used by the previous leaders. Such is the situation at this time in determining the probable course which the nation's as well as Oklahoma's economy will follow during 1989.

Currently economists are divided in their opinions concerning the future of the national economy. Critics of the present administration are of the opinion that it has not taken the actions needed to reduce both the current trade imbalance and the national debt in a timely manner. This failure to act promptly will, in the opinion of the critics, eventually result in a further weakening of the dollar abroad thereby hastening the withdrawal of foreign investors from the bond market thus placing more of the burden of financing the nation on taxpayers and domestic investors. Increases in taxes will, of course, reduce consumption expenditures and this will tend to constrain any real economic growth.

Those economists more neutral or favorably inclined towards the administration are somewhat more optimistic about the future of the economy through at least 1989. For example, the Conference Board's latest report indicates that the business executives contacted by them feel that the economy will continue the same pattern of growth during the next six months as occurred during the past six months. This same organization found that consumer confidence in the economy during 1988 was at its highest level in the past 8 years and that consumer expectations concerning the purchase of high dollar items such as automobiles, appliances, housing etc. were at their highest level since 1983. The consensus of financial forecasters also indicated a continuation of economic growth through the first quarter of 1990 with unemployment remaining relatively low and retail trade remaining strong. This school of economic forecasters, however, does not believe that the growth in 1989 and 1990 will be as strong as that evidenced in 1988. The one trouble spot noted by this latter group of forecasters is that if economic growth during the early and mid portions of 1989 appears to be so rapid as to cause double digit inflation, the Federal Reserve Board will adjust interest rates so as to reduce inflationary pressures and thus impede economic growth.

This latter school of thought seems to be the more widely accepted outlook and therefore the forecasts presented herein are based on the assumption that the national economy will experience growth at least through 1989.

Personal Income

The relatively large increase in personal income enjoyed by Oklahomans during 1988 provides some basis for hope that the economy of the State is beginning to respond to recent economic development activities and thereby benefit from the nation's economic growth. This suggests that personal income during 1989 should grow slightly faster than in 1988. This growth will come from several sources. The recent increases in wage and salary employment should continue through 1989, at least, which will result in further significant gains in wage and salary income. Income from property (in the form of rents and royalties) and from transfer payments are each expected to experience moderate growth but proprietors' income will probably remain relatively unchanged. As a result of these varied changes, personal income, in terms of current dollars, should reach about $47 billion during 1989 which will represent an increase of about 7 percent. Adjusting for the current rate of inflation, the level of personal income during 1989, in terms of 1982 dollars, would be $36.1 billion—an increase of about 1 percent in real purchasing power.

Retail Trade

The renewed confidence in the condition of the national as well as regional economy evidenced by consumers during the past 18 months coupled with the recently announced apparent turnaround in outmigration of Oklahoma's population and the opinion of many economists that the economy will remain healthy through 1989, indicates that retail sales in the State will continue the strong upward pattern portrayed in 1988. Moreover, sales of nondurable goods such as food, apparel and drug stores should reverse their declines of the past two years and experience some significant increases thereby becoming contributors to an expected gain in total sales. It will probably be necessary that the nondurable goods lines show some very real gains if the total sales volume is to rise in 1989 since automobile sales are not generally expected to maintain the rates of increases experienced in both 1987 and 1988 but should increase at a more modest pace. At the present time, the strength evidenced by nondurable goods sales during the last three months should carry over into 1989 resulting in an increase of between 5 and 6 percent in sales of these lines. Conversely, the expected decline in the rate of increase in automobile sales should temper the increase in durable goods sales to a more normal range of 8 to 9 percent. As a result, total sales should increase by between 6 and 7 percent during the year thereby reaching a level of $18.5 billion in terms of current dollars.

Employment

Total nonagricultural employment suffered its second successive decline in 1988 despite increases in some important sectors of the economy. The culprit in 1988, as noted earlier, was the sharp drop in the "All Other" category of jobs. The outlook for the employment levels of the industries included in the "All Other" category (i.e., transportation, public utilities, communications, electric, gas and sanitary services, and finance, insurance and real estate operations) during 1989 is for little if any change in the 1988 level since it is believed that the shake-out of the marginal firms in these employment sectors has run its course. On a more optimistic note, total wage and salary employment in the more basic sectors, which rose for the second successive year in 1988, are forecast to continue the recent trend by

increasing by about 3 percent in 1989. This would bring the level of employment up to about 1,448,000 jobs for an overall gain in total employment over 1988 of between 2 and 3 percent. Much of the increase in wage and salary employment is expected to be due to gains in the manufacturing, trade and service sectors while employment in government, construction and mining should undergo minimal changes.

Construction

In recent years, the forecasts for future construction activity have been extremely poor due largely to the diversity of the types of construction activity which must be forecast and the differing demand pressures which commonly exist for each of the various types of construction. Barring a sharp increase in immigration during the coming year, it is unlikely that any appreciable gains will occur in either single or multi family residential construction. Conversely, the levels of activity in both of these types of construction have reached such low levels that it is difficult to imagine that the double-digit decreases experienced by residential construction of all types over the past four years can continue much longer. In fact, there is some feeling in the real estate industry that the level of activity in 1989 will not differ greatly from that of 1988.

Insofar as commercial building is concerned, that sector too, should experience little change in the dollar volume of activity from 1988 nor should the category labeled "All Other Non Building" construction. This leaves, then, only industrial, institutional and street and highway construction that appear to be susceptible to any significant changes in 1989. Industrial building activity experienced an exceptionally good year in 1988 as it rose by more than 71 percent and it should continue to improve in 1989 although at a much lower rate of increase than occurred in 1988. The feeling now is that the dollar volume of industrial building will be up by about 10 to 12 percent in 1989 and that the value of institutional building will rise between 4 and 6 percent over the same period. Street and highway construction should also increase at between 6 and 7 percent which is about the average rate of the past two years. Combining these incremental forecasts indicates that the dollar volume of total construction activity during 1989 should rise by no more than $26.5 million so as to reach $812 million which represents an increase of 3.3 percent.

Manufacturing

Manufacturing activity as measured by manufacturing employment and industrial power consumption enjoyed a gain of about 4 percent in 1988 and, based on the pattern of the past 18 months, it appears likely that this same pattern will persist through 1989 although at the slightly accelerated rate of from 4 to 5 percent. This increase in activity is expected to be due to gains in output of both durable—up 4 percent, and nondurable goods—up 3 percent.

Banking and Finance

As has been the case during the last two years, the end of the outflow of savings deposits in State depositories is not yet in sight and, after suffering the third successive annual decline are forecast to extend this pattern through 1989 although at the slightly accelerated rate of 4 percent. Conversely, demand deposit balances which have risen steadily during the past two years are projected to experience only a modest increase of 0.2 percent. The culimination of these diverse movements will reduce the total deposit balances in Oklahoma depository institutions in 1988 to $31 billion which will be a decrease of 3 percent from the 1988 volume.

Energy

Forecasts of energy production when predicated solely on past performance tend to be either highly accurate or so inaccurate as to be useless depending on the extent to which prices of crude oil and natural gas fluctuate over the forecast period. Recent market indicators provide some hope that the prices of both crude oil and natural gas have reached some stability in their generally upward movements. This is to say that where these prices have tended to fluctuate widely in the past few years, the movements in recent months have tended to move upward and have lacked the large erratic changes which characterized the 1983-1987 period. Because of the less radical price changes noted in 1988 and early 1989, natural gas production during the calendar year 1989 is projected to increase by between 1 and 2 percent while crude oil production is expected to register a decline of from 3 to 5 percent. Changes of these magnitudes would raise natural gas production to between 2,052,000 mmcf and 2,073,000 mmcf while crude oil production could decline to between 113 million barrels and 115 million barrels during 1989.

General Business Index

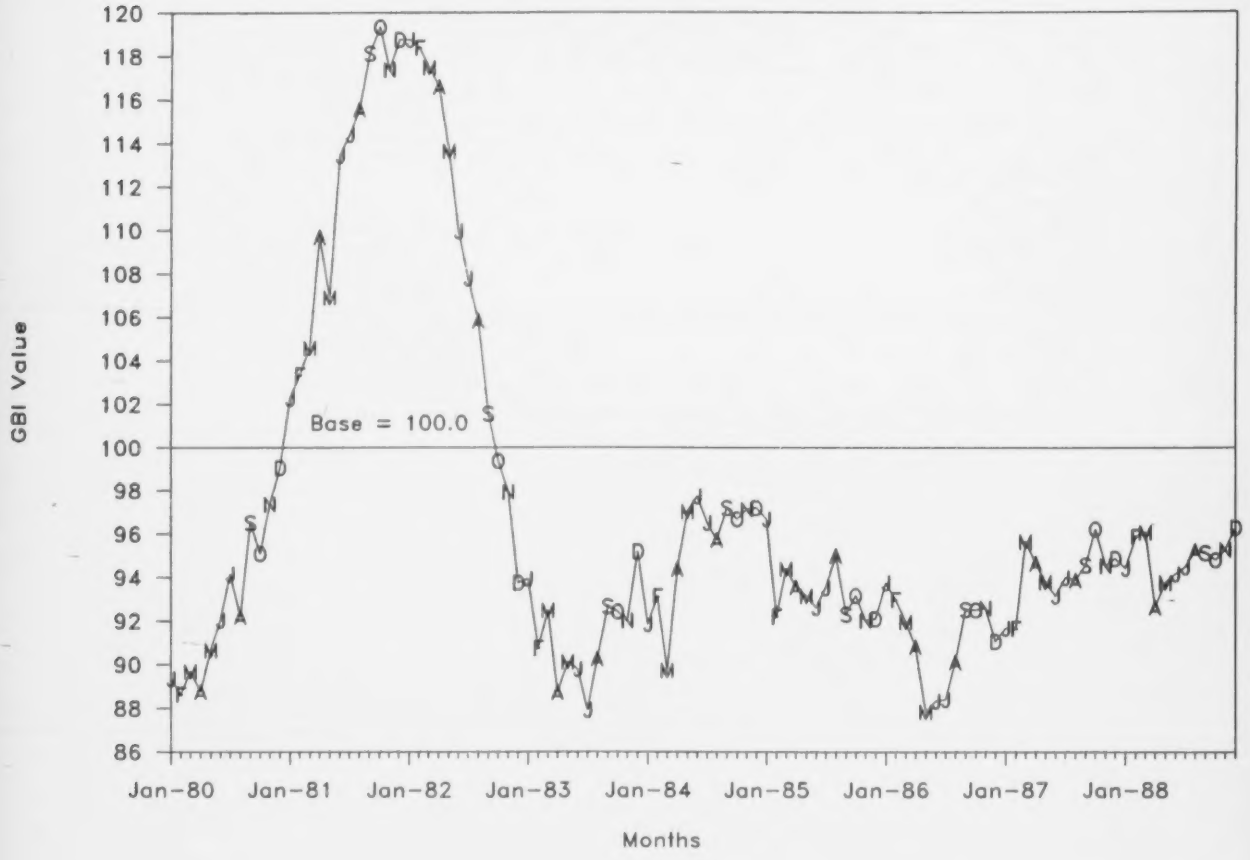
Combining the various changes in the economic indicators discussed above with others such as the number of bankruptcies, sales tax collections and bank clearings suggests that the General Business Index for Oklahoma will increase by about 2 percent during 1989 to bring the level for the year to 96.8.

Note

[1] Includes transportation, communication, finance, insurance and real estate, utilities, etc.

Neil J. Dikeman, Jr. is Director for the Center for Economic and Management Research.

Oklahoma State General Business Index
January 1980 through December 1988



An Analysis of County Personal Income Growth in Oklahoma: 1980-1986

ROBERT C. DAUFFENBACH
TABITHA A. DOESCHER

Introduction

THIS ARTICLE PROVIDES a detailed analysis of the sources of county personal income growth for Oklahoma's 77 counties during the period 1980-1986. The total growth rate of county personal income is partitioned into its component categories in this analysis, allowing the nature of income changes to be explored on a county-by-county basis. The analysis reveals the fragile nature of personal income gains in the state during these years and the vulnerability of county personal income gains to energy prices and to public policy decisions in Washington. Also provided is a Lorenz Curve analysis of county personal income which assesses whether there has been a significant rural-to-urban shift in the within-state distribution of personal income. Somewhat surprisingly, this analysis reveals *less* inequality in county-level income shares in comparison to population shares in 1986 than in 1980.

For Oklahoma the 1980s have been troubling, as the state's economy reached new heights and then tumbled sharply. Other states shared in these difficulties, as well. In fact, counter to longer-term trends, the 1980s marked a period of increasing dispersion of income among the several states.[1] Still the sharp reversal in fortunes in Oklahoma stands out in the national scene.

As might be expected, the incidence of income gains and losses did not fall uniformly about the state. During the 1980s, dramatic changes in comparative county personal income growth rates occurred across the state. In Figures A and B, county growth rates are categorized into five data divisions (quintile analysis), with 15 counties in each of the first four divisions and 17 in the highest division. Figure A maps average annual rates of change in personal income for the 1980 to 1982 boom period. These growth rates ranged from 4.3 to 47.3 percent during this period. In the figure it is apparent that during this period growth-dominance took place in the Anadarko Basin region. Figure B presents somewhat of a reversal for the 1982 to 1988 period.[2] There has been a dramatic shift in relative growth-dominance to the eastern part of the state. Strength is found especially along the Arkansas border; in fact, relative dominance extends at least two or three counties into Oklahoma from the Arkansas border. The following analysis enables a more in-depth examination of such county-level changes.

Data

The data used in this analysis is provided by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). The BEA provides detailed estimates of county personal income by source, but with considerable lag. The most recently available data at the present time is 1986. For any given year, county personal income (CPY) by place of residence can be expressed as the sum of five major components: (1) contributions for social insurance (CSI), which are always negative; (2) residence adjustment (RA), which is sometimes negative; (3) dividends, interest, rents, and royalities (DIRR); (4) transfer payments (TRP); and (5) earnings by place of work (EPW).[3] Thus, for the i-th county:

$$CPY_i = CSI_i + RA_i + DIRR_i + TRP_i + EPW_i$$

To provide even greater detail, it is possible to divide EPW into several industrial components. In this analysis, EPW is divided into farm, mining, construction, manufacturing, supportive services, and government divisions.

Supportive services consist of the following major industrial divisions: (1) transportation, communications, and public utilities; (2) wholesale trade;

(3) retail trade; and (4) services. This analysis will thus use ten components of CPY: the first four major divisions (CSI, RA, DIRR, and TRP) plus six subdivisions of earnings by place of work (EPW).

Component Growth Methodology

The growth rate contribution of a CPY component is defined as simply the percentage change in the size of that component multiplied by the share of that component in base-period CPY. Thus, if a given component increases by 50 percent and initially represents 20 percent of total CPY, that component contributes 10 percentage points to the total CPY growth rate. It matters not whether the component is positive or negative. Algebraically, let

$CPY_{ij,t}$ = CPY for the i-th county, j-th component in year t;

$CPY_{ij,t+k}$ = CPY for the i-th county, j-th component in year t+k; and,

$CPY_{i.,t}$ = Total CPY for the i-th county for year t.

Then, the contribution of the j-th component to the total CPY growth rate from year t to year t+k for the i-th county, expressed as a percentage, is:

$$R_{ij,t,t+k} = 100 \left(\frac{CPY_{ij,t+k} - CPY_{ij,t}}{CPY_{ij,t}} \right) \cdot \left(\frac{CPY_{ij,t}}{CPY_{i.,t}} \right)$$

The first bracketed expression in this formula represents the percentage change in the j-th component, while the second bracketed expression represents the proportion of total CPY originating in the j-th component in the base year. The denominator of the first expression cancels with the numerator of the second; consequently the contribution of the j-th component to the total CPY growth rate simplifies to the change-in-component-growth divided by the initial period total CPY. The sum of the R's over all values of j equals the total CPY growth rate.

Figure A

Average Annual Percent Change in Personal Income, 1980-82

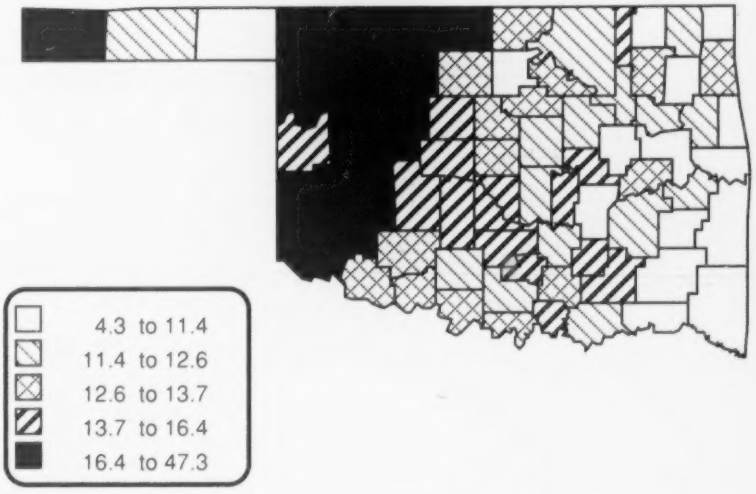
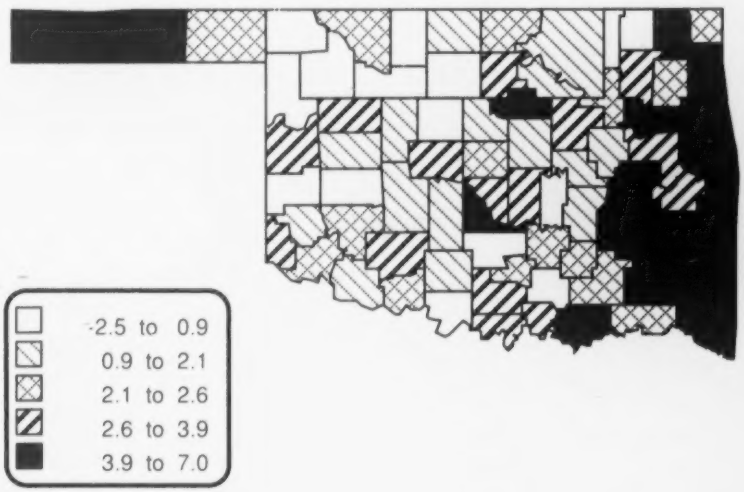


Figure B

Average Annual Percent Change in Personal Income, 1982-88



Growth Rate Partitioning

Table 1 presents the results of partitioning the 1980-1986 total personal income growth rate into the several components identified above. For example, consider Adair county. Total personal income in Adair county grew from $98.839 million in 1980 to $155.602 million in 1986, a 57.4 percent gain. Over this same period, transfer payments rose from $28.659 million to $41.118 million, an increase of 43.5 percent. In 1980, transfer payments represented 29.0 percent of total personal income in Adair county. Therefore, between 1980 and 1986 the transfer payments component contributed 12.6 percentage points to Adair county's total CPY growth rate of 57.4 percent (.435×.290×100=12.6 percent). The other positive numbers in Table 1 can be interpreted in a similar manner.

Components of personal income are sometimes negative and are somewhat more complicated to interpret. In particular, contributions to social insurance (CSI) are always negative.[4] Between 1980 and 1986, CSI in Adair county rose by 91.6 percent, from $2.033 to $3.895 million. Since CSI in 1980 represented -2.0 percent of Adair county's total personal income, the social insurance component contributed -1.9 percentage points to Adair county's total CPY growth rate of 57.4 percent (.916×-.020×100 = -1.9 percent). Another perspective on the interpretation of negative values is the following: Had CSI in Adair county remained at the $2.033 million level instead of rising to $3.895 million, the 1986 total CPY would have been $57.464 million, a 59.3 percent gain. That is, the actual growth rate is 1.9 percentage points lower than it would have been had CSI remained constant. Thus, in this manner, the change in social insurance contributions (a negative factor) can be said to have caused a reduction of 1.9 percentage points in the overall growth rate.

In addition to showing the county-by-county partitioning of the 1980-1986 total personal income growth rate, Table 1 reports the median, mean, and standard deviation for each component. The median and mean values provide useful benchmarks for assessing growth impluses by county.

Review of Table 1 shows that growth from residence adjustment is high in Cleveland, Canadian, and Wagoner counties and low in Tulsa and Oklahoma counties, thereby indicating on-balance place-of-residence earnings flows into the former and away from the latter counties. Growth from dividends, interest, rents, and royalties (DIRR) exceeds median values substantially in Roger Mills, Dewey, Washita, Cimarron, Harper, Delaware, Beckham, Caddo, Kiowa, and Custer counties and, with the exception of Delaware county, is in all likelihood energy-related. These counties had 20 percent or higher growth components from DIRR. Delaware and McIntosh counties scored high through transfer payments growth. This outcome, in conjunction with their lake front locations, higher than average DIRR's, and supportive services growth rates, may indicate that a retirement industry is beginning to flourish there.

The farm income growth component was high in Cimarron, Harmon, Texas, and Harper counties. It is interesting that these four counties also had the highest total personal income growth rates in the 1980-1986 period. Federal government payments to Oklahoma farmers rose from $35 million to $393 million during this period, which undoubtedly assisted growth in this component. Growth in the mining component was positive and sizeable for Alfalfa and Washington counties, but is most notable for its many negative contributions over the period. Greatly affected were Craig, Woodward, Beckham, and Washita counties.

The average county received almost no growth impulse from the manufacturing component; the median contribution was +0.8 percent. However, many counties fared quite well by this measure, including Kay, Custer, Muskogee, Mayes, Adair, and several others. Nevertheless, overall growth from this component was very low. Counties impacted negatively include Stephens and Ottawa. However, both of these counties appear to be recovering based on recent evidence from sales tax collections and their projected 1988 personal income values.

Supportive services, an amalgamation of remaining private-sector industries, was, as might be expected, an important source of growth for Oklahoma and Tulsa counties, each of which attained growth in this component equal to about one-half of total personal income growth. Since service industries are expected to be the most rapidly growing industries in the future, this bodes well for these two areas. Growth from the government component was instrumental in boosting personal income growth rates appreciably in counties with military installations, including Jackson, Comanche, and Cleveland counties. Garfield county, with Vance Air Force Base, proved the expection with a below-median growth from this source. For Jackson and Cleveland counties, growth of the government component represented over one-third of the total growth rate.

Lorenz Curve Analysis

The question of whether there has been a dramatic shift in county personal income from rural-to-urban counties is examined next. Lorenz Curve analysis[5] is used in this assessment and the results are reported in Table 2. In this analysis, the 77 counties are first ordered by population from low to high; next, the shares of total population are computed and then accumulated. Similarly, the share of total state personal income is computed and accumulated for the population-ordered counties. The 15 least populated counties are combined into Group 1, the next 15 in Group 2, and so on. The two largest counties, Oklahoma and Tulsa counties, are combined to form a sixth group.

In Table 2, part A, it is seen that the 15 least populated counties accounted for 2.8 percent of total personal income (place of residence basis) and 3.1 percent of the state population in 1980.

TABLE 1

Component Growth Rates for Oklahoma Counties: 1980-1986

					Earnings by Place of Work (EPW)						
	CSI	RA	DIRR	TRP	Farm	Mining	Const.	Mfg.	Sup. Serv.	Govt.	Total
Adair	-1.9	11.8	8.1	12.6	6.5	0.3	0.3	8.0	5.4	8.0	57.4
Alfalfa	-1.8	-1.8	12.8	10.2	12.5	7.7	0.0	0.0	4.4	3.1	47.3
Atoka	-2.4	-7.5	11.1	17.5	1.0	0.1	5.7	1.9	7.9	13.7	49.0
Beaver	-1.4	-1.4	17.4	7.1	-7.8	-0.2	0.7	-0.4	10.0	3.9	28.1
Beckham	-1.2	2.0	21.1	12.3	1.8	-9.7	0.1	0.0	10.4	5.8	42.3
Blaine	-1.0	1.4	18.5	10.5	17.3	-3.3	-2.3	3.0	2.4	4.7	51.3
Bryan	-1.7	5.0	13.2	15.1	3.0	0.4	0.8	-2.6	12.2	6.5	51.9
Caddo	-1.3	0.5	20.7	12.5	7.9	-3.2	0.3	-1.9	9.7	6.0	51.1
Canadian	-1.8	21.9	9.0	8.1	0.3	-0.3	1.6	4.8	9.7	5.1	56.0
Carter	-2.6	-1.1	14.0	8.9	-0.4	1.0	0.5	5.3	12.8	4.1	42.5
Cherokee	-1.5	4.2	9.6	15.0	8.7	0.1	-0.2	0.4	9.5	12.4	58.3
Choctaw	-0.9	8.2	8.5	12.6	3.9	-0.8	-8.8	-1.0	7.4	4.5	25.9
Cimarron	-1.2	5.1	21.8	12.3	126.9	0.8	-0.2	0.0	10.8	0.7	175.3
Cleveland	-1.7	20.9	8.7	7.7	0.0	0.3	1.1	1.1	10.4	10.1	58.0
Coal	-1.8	-2.6	12.7	18.1	2.3	0.1	-1.7	4.5	6.0	6.3	42.0
Comanche	-2.9	-0.5	8.0	9.9	1.0	0.3	0.9	4.3	13.5	20.2	54.5
Cotton	-1.3	1.8	10.5	13.2	8.3	0.1	1.2	2.7	3.8	4.5	44.8
Craig	-1.8	5.4	12.3	12.4	2.4	-9.1	0.4	2.7	11.7	11.7	48.0
Creek	-1.5	16.6	11.5	8.6	0.4	1.2	0.7	2.5	7.8	4.0	49.2
Custer	-2.5	-1.4	20.0	9.1	1.4	-0.1	0.0	10.9	9.1	7.2	53.7
Delaware	-1.7	10.8	21.3	19.0	13.1	0.2	-0.5	1.7	10.3	6.0	80.2
Dewey	-1.8	-6.3	30.4	11.4	8.0	-3.7	0.7	0.8	12.1	7.3	59.1
Ellis	-2.3	-10.5	15.0	8.4	3.3	0.0	0.2	-2.3	21.6	3.4	36.7
Garfield	-1.6	0.3	9.9	9.2	0.1	1.8	-2.2	-3.5	13.4	3.5	27.2
Garvin	-1.0	1.6	12.7	17.6	0.6	-3.9	-0.9	0.4	3.1	5.9	35.9
Grady	-1.6	1.7	12.8	9.3	1.8	1.4	1.2	1.4	8.9	5.1	39.1
Grant	-1.2	0.5	17.2	9.1	19.7	1.4	0.6	0.5	5.0	2.8	55.7
Greer	-1.5	-4.3	13.5	17.9	7.7	0.2	2.1	-1.3	5.0	11.3	50.6
Harmon	-1.2	2.9	14.3	17.5	32.6	0.0	2.5	0.0	2.5	5.8	76.8
Harper	-1.2	-3.6	21.7	9.5	27.4	-2.5	-1.1	-0.3	8.8	7.1	65.6
Haskell	-1.3	8.3	13.3	13.2	0.1	6.4	0.8	0.4	10.7	4.8	43.5
Hughes	-1.0	0.1	12.2	15.0	-1.7	-2.5	0.7	-2.1	4.8	3.3	28.7
Jackson	-2.5	-1.8	9.6	12.5	9.0	0.0	0.4	3.5	8.9	20.9	60.6
Jefferson	-1.2	-4.0	13.1	11.0	-1.1	-0.1	0.7	2.3	2.6	4.2	27.4
Johnston	-1.5	0.7	8.3	13.8	0.3	1.4	0.6	0.6	6.1	7.4	37.0
Kay	-2.2	0.0	11.7	7.3	0.8	-1.1	-0.9	11.1	8.1	3.1	37.9
Kingfisher	-1.1	3.0	16.3	7.5	0.6	-7.9	-2.3	0.7	9.4	4.5	30.7
Kiowa	-1.4	-0.1	20.3	14.1	9.0	2.0	0.7	1.7	6.9	3.8	53.1
Latimer	-1.5	9.1	12.0	15.2	-1.7	-2.5	-2.4	6.4	6.8	8.4	49.6
LeFlore	-1.4	12.8	10.3	16.5	2.0	-1.2	1.2	1.1	6.2	6.0	53.6
Lincoln	-0.8	10.9	9.7	11.0	-0.6	-2.5	1.2	-1.7	3.7	4.0	34.8
Logan	-1.1	7.0	10.0	11.2	0.5	0.1	1.2	-1.1	5.5	4.8	38.3
Love	-1.6	-1.5	12.3	10.6	4.6	-1.7	0.5	3.2	9.9	5.3	41.8
Major	-0.9	2.5	19.9	9.3	14.1	-4.9	0.4	-1.6	4.2	4.6	47.7
Marshall	-1.9	3.3	13.4	16.3	-1.0	0.2	1.3	4.8	7.3	5.5	49.2
Mayes	-1.7	3.4	10.8	10.8	0.7	0.3	6.1	8.2	7.3	5.7	39.5
McClain	-1.4	13.9	10.2	9.9	2.5	0.4	2.5	-0.4	8.5	4.8	50.9
McCurtain	-2.2	1.8	6.2	12.9	5.1	0.3	1.7	5.3	8.7	6.0	43.8
McIntosh	-1.6	1.8	14.2	19.5	0.2	0.7	0.2	-0.4	10.0	4.7	49.1
Murray	-2.0	-2.5	11.6	13.9	1.5	0.0	2.5	0.5	10.8	7.1	43.4
Muskogee	-2.7	-2.2	8.3	10.0	2.5	-0.3	-1.6	10.0	13.6	7.2	44.8
Noble	-1.5	0.7	11.2	9.2	2.9	0.4	13.5	5.7	11.6	5.8	26.2
Nowata	-0.5	-0.9	8.0	9.6	2.5	-6.7	-1.2	-1.9	4.9	2.7	11.6
Okfuskee	-1.6	-1.5	10.8	16.7	1.9	3.2	3.4	0.1	8.9	6.4	41.7
Oklahoma	-3.3	-7.5	10.1	7.5	0.0	-0.6	0.1	2.9	20.3	11.3	40.9
Okmulgee	-1.7	-0.7	10.5	11.6	0.2	-0.4	1.1	4.2	5.2	4.7	34.3
Osage	-1.0	9.9	7.6	7.2	1.2	-0.5	0.0	1.2	3.8	3.1	30.3
Ottawa	-0.9	6.4	9.3	13.7	3.1	0.3	0.5	-14.9	8.8	5.3	31.7
Pawnee	-1.2	4.8	12.1	10.3	0.3	3.3	0.3	-0.7	5.6	3.8	37.6
Payne	-2.5	0.1	11.4	9.8	0.2	0.3	0.3	5.6	11.2	13.9	50.0
Pittsburg	-2.4	1.0	11.6	13.4	0.9	0.6	0.3	5.5	14.3	7.9	51.1
Pontotoc	-2.1	0.2	10.8	10.9	0.9	2.9	1.3	2.2	11.4	8.2	39.2
Pottawatomie	-1.9	3.7	7.7	10.3	0.2	0.5	0.4	4.0	10.9	4.4	38.5
Pushmataha	-1.5	3.1	10.0	16.4	1.2	0.2	1.3	0.6	6.7	6.0	45.5
Roger Mills	-1.1	-3.9	34.9	10.1	3.3	-6.4	-0.5	-0.3	10.2	6.2	45.9
Rogers	-1.9	14.1	6.4	7.0	0.0	0.3	1.4	7.3	9.2	4.5	50.3
Seminole	-1.5	-1.8	12.3	11.7	0.4	3.5	2.2	0.7	7.1	4.4	31.9
Sequoyah	-1.7	13.7	8.5	14.5	0.5	-0.2	1.5	2.1	9.6	5.9	53.4
Stephens	-0.9	0.9	11.4	10.1	1.0	2.3	-0.5	-9.8	6.6	3.6	20.2
Texas	-1.1	3.2	10.6	7.1	32.5	-3.5	0.3	0.7	4.2	5.4	59.6
Tillman	-1.2	0.8	11.1	12.8	17.0	0.3	0.0	-0.8	4.1	4.7	48.1
Tulsa	-3.2	-4.9	11.1	6.7	0.3	1.5	0.5	2.4	20.4	4.4	39.1
Wagoner	-0.8	28.2	6.9	7.6	0.0	0.2	1.9	1.0	2.9	2.8	50.7
Washington	-1.9	-2.1	11.3	6.1	0.1	6.2	-0.6	1.3	3.6	1.5	26.5
Washita	-0.9	-5.0	22.8	10.1	12.1	-9.8	2.7	-0.7	6.9	5.8	44.0
Woods	-1.7	-0.8	16.5	10.7	5.1	1.5	-0.1	0.0	6.9	6.4	46.6
Woodward	-0.8	0.1	10.5	7.7	-1.7	9.3	-0.4	-0.4	3.4	7.2	16.2
Median	-1.5	0.9	11.5	10.9	0.9	-0.3	0.4	0.8	6.5	5.4	44.8
Mean	-3.2	2.7	13.0	11.6	5.3	-1.3	0.1	1.5	8.4	6.1	45.9
Std.Dev.	13.7	6.9	5.1	3.3	15.9	3.1	2.4	3.9	3.9	3.5	19.3

TABLE 2

Lorenz Curve Analysis of Personal Income: Oklahoma Counties

A. 1980 County Personal Income by Place of Residence

	Percent of Total State Personal Income	Cumulative Percent	Percent of Total State Population	Cumulative Percent
Group 1	2.8	2.8	3.1	3.1
Group 2	4.4	7.2	5.8	9.0
Group 3	8.2	15.4	9.7	18.6
Group 4	13.0	28.4	16.5	35.1
Group 5	29.6	58.0	30.5	65.7
Oklahoma & Tulsa Counties	42.0	100.0	34.4	100.0

Gini Coefficient = 9.00%

B. 1986 County Personal Income by Place of Residence

	Percent of Total State Personal Income	Cumulative Percent	Percent of Total State Population	Cumulative Percent
Group 1	2.9	2.9	2.9	2.9
Group 2	4.4	7.3	5.4	8.3
Group 3	8.2	15.5	9.7	18.0
Group 4	13.1	28.6	16.3	34.3
Group 5	30.1	58.7	31.0	65.3
Oklahoma & Tulsa Counties	41.3	100.0	34.7	100.0

Gini Coefficient = 7.59%

C. 1980 County Earnings by Place of Work

	Percent of Total State Personal Income	Cumulative Percent	Percent of Total State Population	Cumulative Percent
Group 1	2.4	2.4	3.1	3.1
Group 2	4.2	6.5	5.8	9.0
Group 3	7.9	14.4	9.7	18.6
Group 4	13.0	27.4	16.5	35.1
Group 5	29.8	57.2	30.5	65.7
Oklahoma & Tulsa Counties	42.8	100.0	34.4	100.0

Gini Coefficient = 10.33%

D. 1986 County Earnings by Place of Work

	Percent of Total State Personal Income	Cumulative Percent	Percent of Total State Population	Cumulative Percent
Group 1	2.4	2.4	2.9	2.9
Group 2	4.1	6.6	5.4	8.3
Group 3	7.8	14.4	9.7	18.0
Group 4	13.0	27.4	16.3	34.3
Group 5	30.5	57.8	31.0	65.3
Oklahoma & Tulsa Counties	42.2	100.0	34.7	100.0

Gini Coefficient = 9.31%

Similarly, Group 2 represented 5.8 percent of the population, but only 4.4 percent of the income. Thus, the 30 smallest counties represented 9.0 percent of population and 7.2 percent of total personal income. Accumulating the results through Group 5 shows cumulative population share almost 8 percentage points above cumulative income share. This gap is reversed in Group 6, in which the two largest counties exhibit a disproportionate share of income in comparison to population share.

The Gini coefficient provides a summary measure of the extent of inequality across all units of analysis (in this case counties). A Gini coefficient lies between 0 and 100 percent.[6] A value of zero indicates zero inequality, i.e., an exact match between share of population and share of income for each unit of analysis. The Gini coefficient for 1980 county personal income by place of residence was 9.0 percent. This is a relatively small degree of inequality. Moreover, note that the Gini coefficient improved to 7.6 percent in 1986 (part B), a substantial decline. This improvement in the equality of the distribution of county personal income resulted, primarily, from movement in the population distribution. Shares of income for the first four groups were essentially equal in 1980 and 1986. In essence, the smaller counties were able to hold onto their share of income while their populations grew less rapidly than the state as a whole, thereby generating overall improvement in the Gini coefficient. In addition, the two largest counties lost in income share to Group 5, bringing about greater equality in the county income distribution.

Parts C and D of Table 2 repeat the Lorenz Curve analysis using county earnings by place of work. Greater inequality was expected, given the dominance of rural-to-urban job commuting patterns; this was shown to be true. In both 1980 and 1986, the Gini coefficient for income by place of residence was smaller than the Gini coefficient for earnings by place of work. However, the pattern over time was similar: the Gini coefficient for earnings by place of work dropped from 10.3 percent to 9.3 percent between 1980 and 1986. Although there was little change in the share of earnings from Group 1 through Group 4, Group 5 gained at the expense of the two largest counties.

Over the years 1980-1986, the county personal income evidence emphatically does not support the hypothesis of a declining rural Oklahoma. The

population of smaller counties has grown less rapidly than that of the state as a whole, but these population growth differentials do not appear to be large and are certainly not counter to long-term rural-to-urban trends. In general, smaller counties have been able to maintain their shares of total state personal income even though they are not growing as rapidly. The largest 15 counties (Group 5) have gained at the expense of the largest two counties. Therefore, in net terms, the county distribution of personal income is more, not less, equal.

Summary

Taken as a whole, this analysis of county personal income component growth rates reveals the extremely fragile nature of Oklahoma's personal income gains. Although many counties have achieved rates of growth well in excess of inflation, they have done so in a manner that could easily fall victim to the federal budget axe. Farm programs and military spending will be under severe pressure in the era of budget stringency that is about to descend. Transfer payments, particularly social security, will be under long-term duress. Continuance of weak energy prices will differentially impact counties with sizeable DIRR components.

In general, this research has found that Oklahoma personal income problems are in terms of the size of the pie, not its within-state distribution. The improvements noted in the county personal income distribution are beneficial, but not redeeming. Unfortunately, these improvements, at least for the smaller, rural areas, are not based upon a solid foundation of private sector growth. While Oklahoma does not appear to face a rural crisis of greater proportions than it typically suffers, there is little doubt that without continued maintenance of transfer payment mechanisms, a crisis could quickly develop.

Oklahoma is not the only state in this situation, certainly, and there is recent evidence that personal income in the state is beginning to grow more rapidly. Nevertheless, given the general absence of other growth impulses, domestic program cuts in Washington could strike Oklahoma a heavy blow. This analysis reveals that Oklahoma needs to continually strive for economic development renewal. Short, quickly diminishing bursts of activity will prove insufficient to combat long-term problems like the federal deficit. Directed and sustained activity will be necessary to raise significantly the private sector growth potential of the Oklahoma economy.

Notes

[1]See Kate (1988) and Friedenberg (1987).

[2]Currently, 1986 is the most recent year of total county personal income estimates that are available from the U.S. Department of Commerce, Bureau of Economic Analysis. The 1988 county personal income data used to prepare Figure B are projections made by the Office of Business and Economic Research.

[3]Contributions to social insurance (CSI) consist of contributions made by individuals under various social insurance programs, including old-age, survivors, disability, and hospital insurance, supplemental medical insurance, certain retirement programs, and state unemployment insurance. These are excluded from personal income by treating them as explicit deductions. Therefore, the CSI component of personal income is always negative. The second component, residence adjustment (RAJ), is basically an accounting measure, necessary because county of residence is for many people distinct from the county in which they work. Thus, for a given county there are two measures of total personal income: (1) income by place of residence and (2) income by place of work. The residence adjustment factor represents the net adjustment necessary to translate income by place of work to income by county of residence. The dividends, interest, rent, and royalties (DIRR) category is self-explanatory. The fourth component of total personal income is transfer payments (TRP), which are income payments to persons for which they do not render current services. Transfer payments include government payments to individuals (retirement and disability insurance benefit payments; medical payments; income maintenance benefit payments such as supplemental security income payments, aid to families with dependent children, and food stamps; unemployment benefit payments; veterans benefit payment; and federal education and training assistance payments), payments to nonprofit institutions, and business payments to individuals (including liability payments for personal injury, corporate gifts to nonprofit institutions, and consumer bad debts). Finally, earnings by place of work (EPW) consist of total labor and proprietor's income, reported by place of work.

[4]Recall that social insurance contributions are treated as deductions to personal income and are, therefore, always negative. Other components can sometimes be negative, especially residence adjustments. The interpretation of negative values is important, especially in instances where adjustments for inflation are made. In such instances, negative values would, in all likelihood, be much more prevalent.

[5]See *The Methods and Materials of Demography*, p. 178 for a discussion of the Lorenz Curve. Several elementary statistics textbooks also contain a discussion of the Lorenz Curve.

[6]In a graph of cumulative shares of income plotted against cumulative shares of population, the Gini coefficient is the ratio of the area lying between the diagonal line of equality (45 degree line) to the total area beneath the line of equality. See *The Methods and Materials of Demography*, p. 178 for additional discussion.

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